

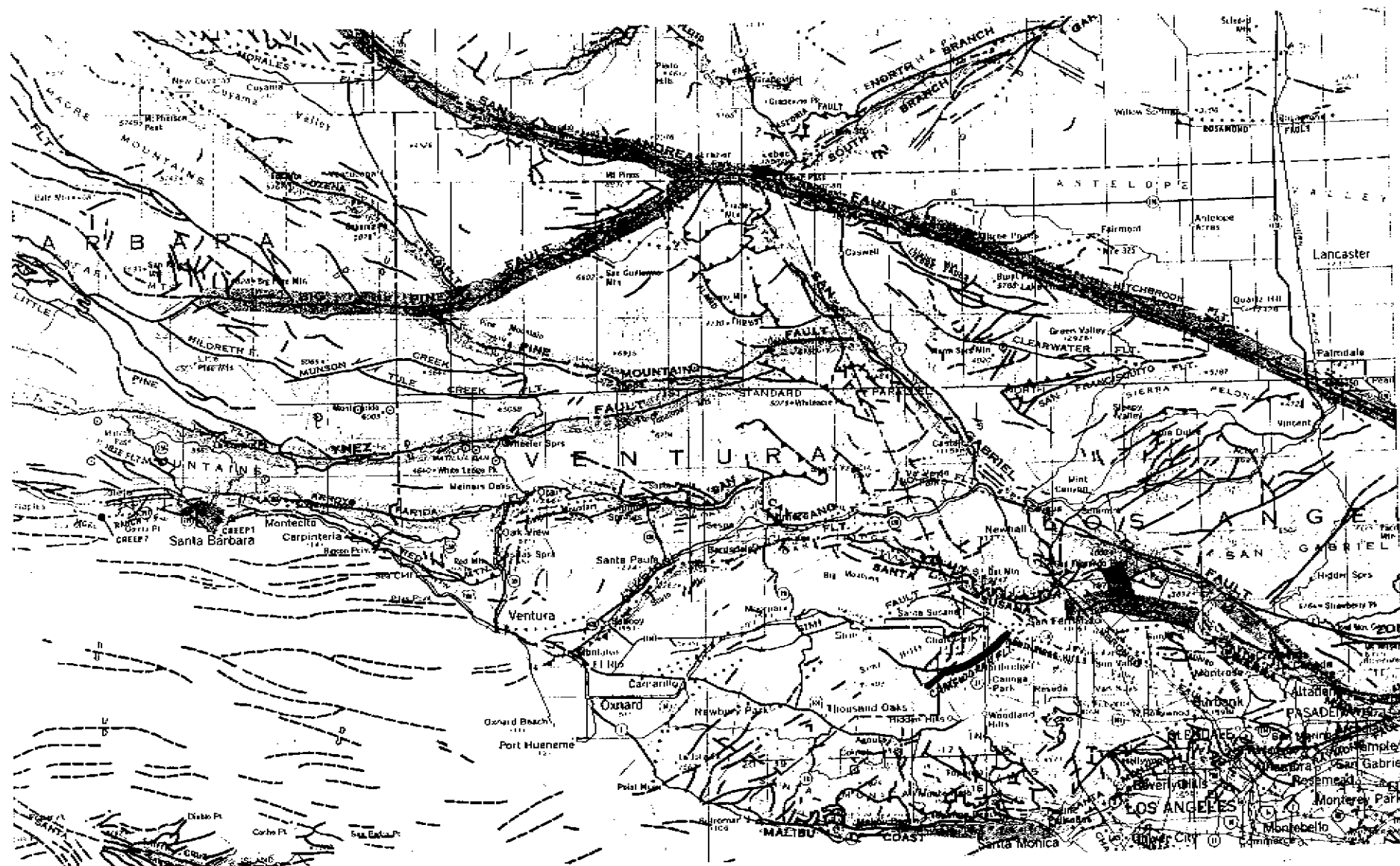
CALIFORNIA DIVISION OF MINES AND GEOLOGY

Fault Evaluation Report FER-53

September 28, 1977

1. Name of fault: Chatsworth fault.
2. Location of fault: Calabasas, Canoga Park, and Oat Mountain 7.5 minute quadrangles, Los Angeles and Ventura Counties.
3. Reason for evaluation: Part of a 10-year program.
4. List of references:
  - a) Barnhart, J.T., and Slosson, J.E., 1973, The Northridge Hills and associated faults -- a zone of high seismic probability? in Geology, seismicity, and environmental impact: Association of Engineering Geologists, Special Publication, p. 253-256.
  - b) Conrad, S.D., 1949, Geology of the eastern portion of the Simi Hills, Los Angeles and Ventura Counties, California: Unpublished M.S. thesis, University of California, Los Angeles, scale 1:37,500.
  - c) Evans, Jim (in press), Map of the west half of Oat Mountain quadrangle: California Division of Mines and Geology, Map Sheet series, map scale 1:24,000.  
  
Note: Not discussed; map does not show Chatsworth fault although Jennings (1975), and Ziony, et al. (1974) show the fault as traversing the same area.
  - d) Jennings, C.W., 1975, Fault map of California with locations of volcanoes, thermal springs and thermal wells: California Division of Mines and Geology, California Geologic Data Map Series, Map no. 1, scale 1:750,000.

FIGURE 1. General location of the  
Chatsworth Fault (Jennings, 1975,  
scale 1:750,000).



- e) Real, C., 1976, Earthquakes since 1932 in the Transverse Ranges, southern California (B quality locations): Unpublished data in A-P file, map scale 1:250,000.
- f) Sage, O.G., Jr., 1971, Geology of the eastern portion of the "Chico" Formation, Simi Hills, California: Unpublished M.A. thesis, University of California, Santa Barbara, map scale 1:18,000.
- g) Weber, F.H., Jr., Kiessling, E.W., Sprotte, E.C., Johnson, J.A., Sherburne, R.W., and Cleveland, G.B., 1975, Seismic hazards study of Ventura County, California: California Division of Mines and Geology, Open File Report 76-5LA, 396 p., 9 pl., map scale 1:48,000.
- h) Wentworth, C.M., Bonilla, M.G., and Buchanan, J.M., 1969, Seismic environment of the Burro Flats site, Ventura County, California: U.S. Geological Survey open file report 1973, 35 p., 2 figures, map scale 1:24,000.
- i) Wentworth, C.M., and Yerkes, R.F., 1971, Geologic setting and activity of faults in the San Fernando area, California in The San Fernando, California earthquake of February 9, 1971: U.S. Geological Survey Professional Paper 733, p. 6-16.
- j) Ziony, J.I., Wentworth, C.M., Buchanan-Banks, J.M., and Wagner, H.C., 1974, Preliminary map showing recency of faulting in coastal southern California: U.S. Geological Survey, Miscellaneous Field Studies Map MF-585, 15 p., map scale 1:250,000, 3 plates.

Figure 2. The northeastern segment of the Chatsworth fault, etc.  
(from Bamhardt & Slosson, 1973, p. 254).

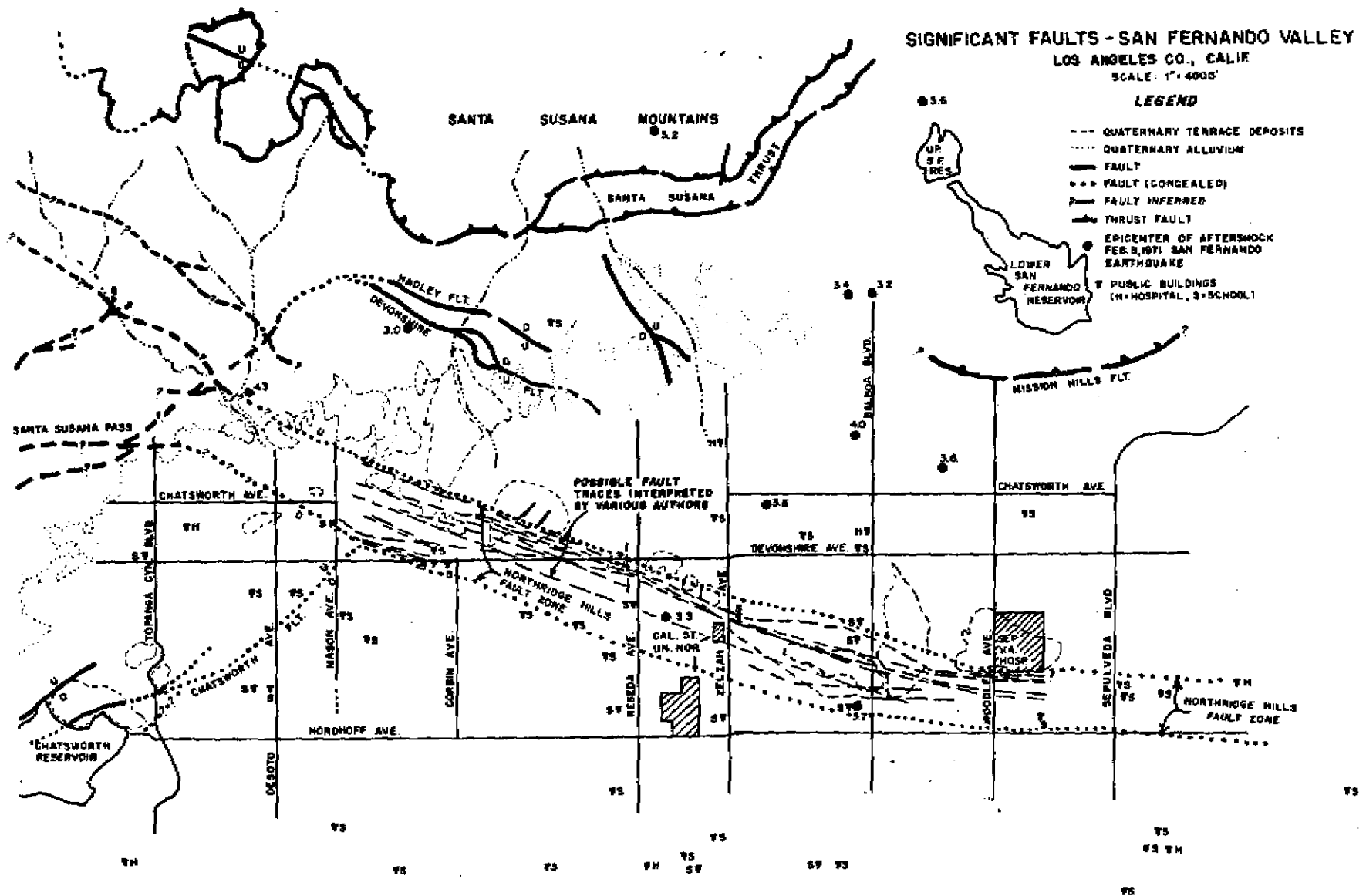


FIGURE 1. Structural pattern and significant faults, San Fernando Valley, California.

## 5. Summary of available data:

Not much is known about the Chatsworth fault. Weber, et al. (1975, p. 177) describe the Burro Flats fault as being an extension of the Chatsworth (although he does not refer to the Chatsworth by name) and notes that some of the aftershocks of the 1971 San Fernando earthquake were located in the same area. Data in the A-P file (Real, 1976), indicates that three of the 1971 earthquake epicenters (B quality) were located near the junction of the Chatsworth and Northridge Hills faults, but are not distributed along the Chatsworth itself. Barnhardt and Slosson (1973, p. 255) state that these three shocks were on the Northridge fault (see figure 2).

As mapped by Conrad (1949), the Burro Flats fault (he called it the Simi fault) is probably a separate fault from the Chatsworth fault. Sage (1971) depicts the Burro Flats fault as not cutting Toponga Formation (Miocene). Conrad depicts a trace of the Chatsworth fault, which Wentworth, et al. (1969, p. 16) call a branch of the Reservoir-CE fault, as cutting terrace deposits. While Conrad states that these deposits are Holocene in age, the topography indicates that they are probably late Pleistocene (Conrad does not describe any data that would support assigning these deposits a Holocene age).

The Chatsworth fault is at least as young as late Quaternary in age, as indicated by the offset at the base of the late Quaternary alluvium (Ziony, et al. 1974; Wentworth, et al., 1969, p. 16). A groundwater "cascade" 25 m. high, down on the south, has also been reported (Wentworth and Yerkes, 1971, p. 14); however, the precise location is not indicated on their map. No detailed map of the fault northeast of the traces shown on plate 1 was found, other than that reproduced as figure 2. Evans (in press) does not show the fault in his field area, and thus, may feel that the northeastern extension may not exist.

6. Air photo interpretation: Not attempted.  
7. Field observations: Not attempted

8. Conclusions:

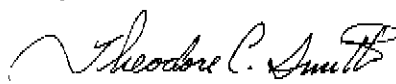
The Chatsworth fault is a late Pleistocene fault which may or may not be well-defined. There is no conclusive data available that would indicate that the Chatsworth fault has moved during Holocene time. However, the fault has apparently moved sometime during the late Quaternary.

The Burro Flats fault is probably a separate fault (contrary to Weber, et al., 1975, data), and apparently last moved in pre-Pliocene time.

9. Recommendations:

Based on the present project guidelines and the data summarized herein, zoning of the Chatsworth fault is not recommended at this time. It is doubtful whether any useful evidence of Holocene displacement could be discovered as a part of this project given the present project's limitations, or without detailed subsurface investigations (trenching).

10. Investigating geologist's name; date:

  
THEODORE C. SMITH  
Assistant Geologist  
September 28, 1977

*I agree with recommendation.*  
*ELH*  
*10/11/77*